L
11
E3

Educational Research Bulletin

(Registered in United States Patent Office)

Vol. VI SEPTEMBER 14, 1927 No. 12

TABLE OF CONTENTS

An Eloquent Arithmetic ..... *H. G. Good* 243

Special Classes for Handicapped Children .... *J. E. W. Wallin* 247

Editorial Comment:
The Editor Turns Professor 252

The Bureau of Educational Research in 1926–27 254

Looking Back on the Seventh Annual Ohio State Educational Conference 257

The Senior High-School Principals' Professional Magazines, *James L. LaPoe* 259

Educational Readings 261

In Paper Covers 264

THE OHIO STATE UNIVERSITY
COLLEGE OF EDUCATION
GEORGE F. ARPS, *Dean*

Published fortnightly, except during June, July, and August, with but one issue in December,
by the Bureau of Educational Research, Ohio State University.

Entered as Second-Class Matter February 9, 1922, at the Post-Office at Columbus, Ohio, under the act of August 24, 1912.
Accepted for mailing at specified rates of postage provided for in Section 1103, Act of October 3, 1917,
authorized February 21, 1922.

Educational Research Bulletin

AN ELOQUENT ARITHMETIC

H. G. Good
Ohio State University

Eloquence and mathematics are not usually conjoined in peoples' thinking. Perhaps the conflict between them, like some other disputes that affect educational discussion, goes far back in history rather than deep into the nature of things. That it does go far back in history is evidenced by a medieval writer who has called the grammar, rhetoric, and logic of the trivium, "the threefold way to eloquence"; and the arithmetic, music, geometry, and astronomy of the quadrivium, "the four fold way to wisdom."[1] The distinction does not always go deep into the nature of things as may be seen by asking ourselves the self-answering question: "Do not both arithmetic and eloquence aim at the appropriate statement of the truth?

Men sometimes think that eloquence tries merely to persuade and often to make the worse appear the better reason; yet words are not more subtly prostituted to bad ends than figures are. Both words and figures may be misused either craftily or carelessly. No art, however, should be judged by its perversions. Judged by their nobler sides, both eloquence and number aim at the appropriate setting-forth of the truth. This view also is historic. Did not Isocrates show that oratory may serve the highest interests of humanity and Quintilian that the speaker must constantly use precise information and compelling logic, if he would truly convince the best minds? If all this is fairly said, then our medieval writer was not really poin ing to a duplex goal but to several stations on the same path, the path to a knowledge of what is. We may easily find examples of books on mathematics which have a cogency, an elegant clearness and simplicity, and a wealth of content that one must in fairness call eloquent. The French seem to be especially adept in writing such books, but Americans also contribute a share. An American example which contains a great deal of eloquence, some true and appropriate, some false and over-strained, is discussed in this article.

Horace Mann[2] mentions, in a letter of 1851, a series of arithmetic texts involving "a new principle" which he, "in conjunction with a gentleman very competent to perform the labor," was preparing at that time.[3] The new principle was that of introducing into the problems the most varied information from the sciences and arts, from political and social studies, from biography and history, and from statistics and commerce. These problems were to be "real" problems; the books containing them

[1]Smith, David Eugene. *History of Mathematics: Special Topics of Elementary Mathematics.* Boston, Ginn and Company, 1925. Vol. II, p. 3.

[2]This is the second article of a short series on Horace Mann. See this Bulletin, 5:351-53, November 17, 1926.

[3]Mann, (Mrs.) Mary. *Life of Horace Mann.* Boston, Lee and Shepard, 1891. p. 351.

have since been classified as "practical" arithmetics.[1]

The collaborator was Pliny Earle Chase (1820-1886), a Harvard graduate and a teacher. He first taught in New England, later in Philadelphia, and eventually at Haverford College. Chase was an active scientist, a contributor to American and European journals, and a Vice-President of the American Philosophical Society. He wrote several books, including *Elements of Meteorology . . . . for Schools and Households*.[2]

Chase's *Elements of Arithmetic . . . . Taught Inductively, on the System of Pestalozzi*[3] seems to show the influence of Colburn's *First Lessons*. A greatly simplified version of the *Elements* is called *The Good Scholar's Easy Lessons in Arithmetic*.[4] There is also a *Common School Arithmetic* by the same writer but this I have not seen. Perhaps it was to the first of these that Thomas Hill pointed when he wrote:

> I have known but three really good treatises on arithmetic published in this country in my day; one of these, [is] Warren Colburn's *First Lessons*. . . . . a second was promptly suppressed by legal proceedings because it infringed on Pliny E. Chase's copyright; and Chase's *Arithmetic* has gone out of print, and the stereotype plates have been melted because the popularity of a textbook in America is in inverse proportion to its real merits.[5]

This pessimistic view arouses one's interest, perhaps a factitious interest, from the known ability and position of Dr. Hill. His ideas were that arithmetic should begin with observation, not with reasoning, and should deal with nature and truth rather than with "the errors and weakness of men." These are among the reforms which Horace Mann and Pliny Chase tried to accomplish through their texts.

Arrangements between Mann and Chase to prepare arithmetic texts must have been made sometime after 1848. Whether "very competent," as Mann said, or not, it clearly appears that Chase performed most of the labor. From the collaboration there resulted three books, each with the names of Horace Mann and Pliny E. Chase on the title-page.[6]

Two of the texts were graded schoolbooks, and the third was the unusual work which we have dared to call "an eloquent arithmetic." The title of the latter book is *Arithmetic Practically Applied: for Advanced Pupils and for Private Reference, Designed as a Sequel to Any of the Ordinary Textbooks on the Subject*. It appeared in 1850 and contained 384 pages.

Most students first learn of this book from a note on it by J. M. Greenwood. The note is as follows:

> The information composing the problems is drawn from at least a hundred sources. It is highly instructive as well as eminently practical. A good title to the book would be "Useful and Scientific Information Treated Arithmetically." A revised edition ought to be in the hands of every teacher. It has never been properly appreciated, and few copies are in existence; even the publishers do not have a copy.[7]

---

[1]Monroe, Walter Scott. *Development of Arithmetic as a School Subject*. Washington, Government Printing Office, 1917. pp. 116-18. (United States Bureau of Education, Bulletin No. 10)

[2]Philadelphia, Porter and Coates, n. d.

[3]Philadelphia, Uriah Hunt and Son, 1844. 144 pp.

[4]Philadelphia, Uriah Hunt and Son, 1845. Also Salem, Massachusetts, W. and S. D. Ives, 1845. Both 46 pp.

[5]Hill, Rev. Thomas. *The True Order of Studies*. New York, G. P. Putnam's Sons, 1882. (First appeared in 1859 in Barnard's *American Journal of Education*, 6:180-94, 449-58; 7:273-84, 491-502.) Dr. Hill was President of Antioch College (Ohio) and of Harvard University. As President of Antioch (1859-62) he was the immediate successor to Horace Mann.

[6]These were all published by E. H. Butler and Company, of Philadelphia. *See* Mann, *op. cit.*, p. 352, in which Mrs. Mann, referring to the work being reviewed, declares that "the publishers made little effort to forward it." The truth of this may be doubted, for E. H. Butler and Company seems at least to have offered the book for sale for many years. More probably the limited field of a work intended for teachers and "advanced pupils" provides a better explanation of its slow sale.

[7]Greenwood, James M., and Martin, Artemas. "Notes on the History of American Textbooks on Arithmetic" in *Report of the U. S. Commissioner of Education, 1897-98*. Washington, Government Printing Office, 1898. p. 854. To check the statement of these writers that "few copies are in existence," an inquiry was directed to twelve large public and university libraries. Of the twelve, five have copies. The Library of Congress has a sixth and doubtless there are others. Yet, of course, it is a rare book. Two of the six are re-issues, with different dates—1851 and 1857—but no changes in the text.

To give the reader an idea of the organization of the book and of the kinds of information embodied in its problems, the titles of a few of its twenty-three chapters and of a few of the books from which the information was compiled are given here. The chapters are "Measures," "Weights and Currencies," "The Farm," "The Garden," "The Household," "Artificer's Work," "Strength of Materials," "Specific Gravity," "The Road," "The Engineer," "The Laboratory," "Statistics," "Position,"[1] and "Approximations." The books include the following: among the several encyclopedias, the *Britannica;* biographical dictionaries; a manual of the United States Mint; Sir John Herschel's *Outlines of Astronomy;* J. Liebig's *Animal Chemistry;* C. Wistar's *System of Anatomy;* social documents like the *Annual Reports* of the Massachusetts Board of Education; technical works such as A. D. Bache's *Report on Weights, Measures, and Balances* and N. Bowditch's *Practical Navigator;* mathematical works including Barlow's Tables, old Bonnycastle, and that joy forever—C. Hutton's *Recreations in Mathematics and Natural Philosophy.*[2] No wonder the book is eloquent! A bibliography of sources in a school arithmetic is an infrequent but commendable feature.

The reader will want to know not only what the book tries to do but also what it does—an expectation hard to satisfy in a short review. Some matters are clear. It introduces letters and an amount of algebraic work and work with formulas, but it uses such cumbersome notation and algebraically misleading expressions as this one for the "solidity" of a prism: $s = al \times a$ of b. It places stress upon approximations but uses a great many "blind" processes—"do this and you will get the answer." Decimals carried out to six places match up well with unreasonably large numbers, such as required in this problem, for example: "The population of Washington in 1840 was 23,364. If all the inhabitants were to commence counting at the rate mentioned in the last example [3 per second for 10 hours per day], how long would it take them to count a trillion dollars?" There are also many practical and reasonable problems. The slide-rule is briefly treated. Let it be counted a virtue that in a book of 1850 it is mentioned at all. Geometrical progressions are applied in computing compound interest. There is an intelligible account of the standard weights and measures of the United States and other countries and a discussion of how these were established. Much of the information is both useful and accurate as well as interesting, but a good deal is trivial. Some, too, is amusing misinformation as, for example, the categorical statement that "weights and measures" were "instituted" in 869 B. C. Doubtless the book, as Greenwood suggested, needs revision, radical revision. As a "sequel to arithmetic," however, and as a book of reference for advanced students and teachers, it deserves attention, and even merits rational imitation.

Mann and Chase wrote two separate prefaces. From these we learn what they thought of the book, as well as the share of each in its preparation. Take the latter point first. Mann contributed the central idea, "the new principle," and he suggested some few sources of material and helped in the revision. Chase compiled and wrote the book. His preface points out that the work is not merely another arithmetic book "of the ordinary stamp."

> Its plan is, in most respects, entirely new. . . . I have long believed that a Sequel to Arithmetic, not in place of, but following upon, the ordinary

[1] Readers may find a brief account of this topic in Smith, loc. cit., and another by the same author in an article, "False Position" in Paul Monroe, *Cyclopedia of Education.* New York, Macmillan Co., 1909. Old textbooks offer a fuller source of information. With the introduction of the study of algebra into schools the topic lost its usefulness and it disappeared about the time when Chase was writing.

[2] These titles are taken from the bibliography of Mann and Chase in which the publisher, place, and date of publication are not given.

arithmetic, is much needed. It will supply many supplementary examples and needed practice materials.

He includes a defense of the use of letters and formulas and here, as well as elsewhere, time has supported his ideas. The Preface written by Chase is sane and moderate. That his mode of carrying out his ideas is open to many criticisms has been indicated.

Mann's Preface invites fuller examination. He wrote as follows:

> Believing the idea of the work to be original, I will attempt its elucidation. In seeking for the . . . . materials of its questions, it proposes to take a survey of all the vocations of life, of all the facts of knowledge, and of all the truths of science, and to make a selection from each department of whatever may be most interesting and valuable. It does not confine itself to the playthings of the nursery, nor to the commodities of the market-place, and to the money they will cost or make or lose. On the contrary, the present work proposes to carry the student over the wide expanse of domestic and social employments; to introduce him to the various departments of human knowledge. . . . . It derives its examples from biography, geography, chronology, and history; from educational, financial, commercial, and civil statistics; from the laws of light and electricity, of sound and motion, of chemistry and astronomy, and others of the exact sciences. Trades, handicrafts, and whatever pertains to the useful arts, so far as they are the subject of numerical statement, ... economical and political knowledge, and . . . . scientific discoveries [all] are laid under contribution.

The book, as has been seen, was to "exemplify in the best manner the science of numbers, and be full of useful knowledge also." It was to exercise "the student's powers of calculation" and in the same act to enlarge his acquaintance with "the varied business of the world" and "the most interesting results of applied science." The informed reader, however, will have foreseen that this is not yet the complete "elucidation." Mann would not neglect so good an opportunity for oratory. He proceeds:

> In a universe like this, where every star has been weighed in a mathematical balance, and all the interstellar spaces have been measured by a mathematical line; where all the orbits of all the planets have been traced as by a compass, and their velocities graduated to their distances by an unchanging law; where not only wind and tide, but every particle of dust in a hurricane and every drop of water in a cataract know their exact places by an infallible rule; where the gravitation of matter, the radiation of heat, and the diffusion of light, at all times and instantaneously, adjust their forces to their distances with unerring precision; where every chemical combination . . . .

Why continue? Simply because one cannot rest in mid-air.—

> I say in such a universe, built, weighed, measured, compounded and arranged on mathematical principles, why should not the arithmetical exercises of those minds which have entered it, to dwell in it forever, embrace something more than the market-price of commodities, the gain or loss in trade, and the interest and discount of banks?

Yet Mann is said to have been a practical person, and this a practical book! No, Mann in this case was an orator and his Preface is an exercise in "fine speaking," but it is an eloquence that has very little to do with the book which it introduces.

There is, however, an eloquence of a certain stamp in the book itself. The problems tell of the Romans in Italy, the Pilgrims at Plymouth, the march of discovery and science, the rise and fall of stocks and fortunes. Statistics and numerical facts, properly stated and read, have an eloquence of their own. This is the eloquence appropriate to the subject. And why, we ask again, should not every subject, even arithmetic, be eloquent? Arithmetic in the sixteenth century became narrowly commercial. Through the influence of those sixteenth century books upon those of the seventeenth and eighteenth centuries, and eventually, upon Pestalozzi, modern arithmetic has been kept similarly narrow and, to a degree, sterile. No one denies the importance of commercial applications in arithmetic, now more numerous than ever, but they are not the only applications of interest to children who are above the kindergarten age.

Information to Mann was evidently valuable in itself and for itself, although it would be untrue to say that all information seemed to him equally valuable. Furthermore, information could be acquired incidentally and, as one might think, when the pupil was not looking. Thirdly, it must not be forgotten that the ambiguous word "practical" means, first, useful in the activities of ordinary domestic and business life and, second, useful in answering questions and satisfying intellectual curiosities. The "mathematical balance" wherein the stars are "weighed" finds no place on the counter of the grocery store. The *Arithmetic Practically Applied* was meant to be practical in the first sense—but also, and especially, in the second. It was meant to be eloquent. Its eloquence for the most part is that of the "very competent" collaborator. Fortunately, the high-flown speeches of Horace Mann are confined to the preface.

SPECIAL CLASSES FOR HANDICAPPED CHILDREN

J. E. W. WALLIN
Miami University

A QUESTIONNAIRE asking for data on special classes was sent, during November, 1926, to superintendents of schools in the 145 Ohio cities having a population, according to the 1920 census, of more than twenty-five hundred. Replies were received from 101 of these cities.

No elaborate analysis of the tabular data will here be attempted; the tables speak for themselves. Our comments must be largely restricted to the classes for the mentally handicapped, all of which are supported by the local school districts without state aid.

According to the replies, twenty-five cities maintain classes for mentally deficient children. These cities are listed in Table I. That some of these classes contain not only mentally deficient, but also merely backward children, is suggested by the fact that the number of children assigned to them is very large in some cities, and by the further fact that some cities do not maintain separate classes for backward children.

Classes for backward children are supported by only eleven cities (See Table II). Of these, Akron, Ashland, Dayton, Lakewood, Lima, and Youngstown, likewise have classes for the mentally deficient; and of these six, Ashland and Dayton maintain more classes for backward than for mentally defective children. Dayton, in its ungraded-class system, now provides more than three times as many classes for the backward as for the mentally deficient. The latter are assigned to separate special schools. The number of children who should be placed in classes for the backward is at least from three times to six times as great as the number who need attention because of mental deficiency. If there is any conclusion which follows as an inevitable consequence of the normal curve of distribution, it is that there are far more backward children than mentally deficient.

In fourteen cities, mentally deficient and borderline or backward cases are assigned to the same classes (See Table III). This is perhaps necessary in the smaller cities. In the larger ones, however, such a situation should not exist.

One of the greatest services which the schools can render to the pupils and to society is to be responsible for the proper examination, differentiation, and classification of mentally handicapped children. To organize an efficient system of special instruction for them requires a dual plan of special classes, that is,

classes for the borderline and backward, on the one hand, and classes for the mentally deficient, on the other. When this separation is not made, instruction favors one or the other of these types.

Satisfactory differentiation cannot be made merely upon the basis of standardized tests. Psychological and educational diagnoses require a synoptic study of a child's entire physical and mental make-up and an investigation of his genetic background. It is doubtful whether a city or county of less than a hundred thousand population has sufficient money at its disposal to establish a mental clinic worthy of the name. The first essential in its organization is the selection of a competent director. He must be a clinical psychologist and a specialist in the differential education of all types of handicapped children, and must possess sufficient medical knowledge to be able to check up, interpret, and use medical findings. Such a person, and the necessary equipment, can hardly be supported by small cities, towns, or rural districts; these communities must depend upon the state and county bureaus or clinics. The Psycho-Educational Clinic, of the Miami University Bureau of Special Education, has examined, free of charge, about thirty-five hundred mentally handicapped children in more than seventy school districts throughout Ohio since its organization.

According to available information, there were at least forty-six cities in

TABLE I

CLASSES FOR MENTALLY DEFICIENT CHILDREN

City	Classes	Teachers	Pupils	Bonus (Dollars)
(1)	(2)	(3)	(4)	(5)
Akron	3	3	48	100
Ashland	1	1	14	100
Athens	1	2	14	*
Campbell (East Youngstown)	2	2	30	None
Cincinnati	37	38	720†	None
Cleveland	89	89	1,500	None
Dayton	5	5	82	100-200
East Cleveland	1	1	12	None
Elyria	1	1	19	100
Euclid	1	1	20	50
Findlay	2	2	38	200
Fostoria	1	1	21	100
Fremont	2‡	1	29	100
Geneva	1	1	10	300
Hamilton	1	1	10	None
Jackson	1	1	34	None
Kent	1§	1	15	100
Kenton	1	1	17	300
Lakewood	7‖	7	105	None
Lima	5	5	77	100
Martins Ferry	2	2	35	None
Norwood	1	.....	14	.....
Piqua	2¶	2	27	100
Warren	7	7	135	None
Youngstown	24	24	403	None
Total	199	199	3,429	.....

*Salary paid jointly by board and Ohio University at critic rate of $2,400. One teacher on full time and one on half time. †Number of pupils estimated. ‡Morning class for boys; afternoon class for girls. §The inference from the reply is that this class may contain some backward children. ‖Special classes in two buildings with part-time teachers in domestic science and manual training in each building. ¶Children from nearby rural schools attend one of these classes.

NOTE.—Celina has ability groupings within the regular grades. Marietta has discontinued special classes temporarily.

TABLE II

CLASSES FOR BORDERLINE AND BACKWARD CHILDREN

City	Classes	Teachers	Pupils	Bonus (Dollars)
(1)	(2)	(3)	(4)	(5)
Akron	2	2	65	100
Ashland	2	2	45	100
Ashtabula Harbor	1*	.....	.....	.....
Dayton	14	14	265	100-200
Lakewood	4	4	75	None
Lancaster	1	1	16	None
Lima	4	4	64	100
Mansfield	2	4†	92	None
Ravenna	1	1	18	None
Tiffin	1	1	22	50
Youngstown‡	.....	.....	.....	.....
Total	32	33	662	.....

*Reported as a temporary class. †One woodworking, one domestic science, and two academic teachers. ‡There are several classes in the schools for coaching and special help for backward children but they are not designated as classes for borderline and backward children.

NOTE.—East Cleveland groups all pupils according to mentality. Martins Ferry has "low" groups in every grade for these children. Maumee has three classes for "C" group children. Nelsonville has classes sectioned according to ability. Willard groups the backward children in the regular grades.

Ohio in November, 1926, which maintained special classes for mentally deficient, borderline, and backward children, together or separately. This includes the forty-three cities which replied affirmatively to the questionnaire,[1] and three cities that did not reply; two of the latter, Troy and Xenia, are known to have special classes, and the other one, Marion, has had, and probably still has, a class. Six cities—Celina, Maumee, Willard, Miamisburg, Nelsonville, and

TABLE III

CLASSES CONTAINING BOTH MENTALLY DEFICIENT AND BACKWARD OR BORDERLINE CHILDREN

City	Classes	Teachers	Pupils	Bonus (Dollars)
(1)	(2)	(3)	(4)	(5)
Cambridge	1	1	15	None
Chillicothe	3	3	120	None
Circleville	1	1	24	95
Columbus	23	23	420	100
Euclid	1	1	20	90
Greenfield	3	3	68	None
Norwalk	8	5*	45	None
Springfield	4	4	74	100
Toledo	24	28	457	100
Van Wert	1	1	16	180
Washington Court House	2	2	38	None
Wooster	2	2	80	.....
Youngstown	7	7	124	None
Zanesville	1	1	8	200
Total	81	82	1,539	.....

*Apparently includes part-time teachers.

NOTE.—Miamisburg has one group of backward children selected from the fifth and sixth grades which passes from teacher to teacher under departmental organization. Nelsonville sections pupils according to ability. In Urbana about twenty-five mentally deficient, backward, and borderline children are retained in four first grades for additional instruction.

Urbana—which reported some form of sectioning or grouping, were not included in this classification.

All of the nine Ohio cities of more than sixty thousand have special classes for mentally retarded children except Canton. Eight of the sixteen cities of from twenty thousand to fifty thousand maintain special classes while eight do not. The latter include Lorain, Portsmouth, Steubenville, Newark, Sandusky, Middletown, Alliance, and East Liverpool. Certainly all of these cities need special classes both for mentally deficient and for backward children.

Of the twenty-five cities whose population is between ten thousand and twenty thousand, thirteen support special classes. The twelve which need such classes, but fail to provide for them,

[1] Fifty cities are listed in Tables I to III, but seven cities are counted twice.

TABLE IV

CLASSES FOR CRIPPLED CHILDREN

City	Classes	Teachers	Pupils	Bonus (Dollars)
(1)	(2)	(3)	(4)	(5)
Akron	1	3	63	100
Ashland*	.....	.....	.....	.....
Barberton	1	1	16	100
Barnesville	1	1	14	.....
Berea†	.....	.....	.....	.....
Cambridge	1	1	13	150
Campbell (East Youngstown)	1	1	14	100
Canton	1	2‡	20	.....
Cincinnati	12	12	281	150
Cleveland	.....	12	154	150
Columbus	5	6	82	100
Dayton	1	3	37	100-200
East Cleveland†	.....	.....	.....	.....
Elyria	2§	4	42	100
Euclid‖	.....	.....	.....	.....
Girard	.....	.....	2*	.....
Jackson	.....	.....	4*	.....
Lancaster	1	1	10	None
Lima	2	2	26	100
Mansfield	1	1	15	100
Norwood¶	.....	.....	.....	.....
Piqua	1	1	8	100
St. Bernard¶	.....	.....	.....	.....
Sandusky	2	2	21	250
Springfield	1	1	15	100
Toledo	8	8	170	100
Warren	1	1	14	.....
Youngstown	3	3	51	.....
Total	46	66	1,072	.....

*Provides transportation to and from regular classes. †Sends cripples to special schools in Cleveland. ‡Apparently one teacher on half time. §One class in city schools. Two classes in connection with Gates Hospital, which include out-of-town cases. ‖Sends cripples to Rose Mary Home for Crippled Children in Euclid Village. ¶Sends to class for crippled in Cincinnati.

NOTE.—Ashtabula Harbor reports three crippled children attending high school. Cities which failed to reply, but which are known to have special classes for crippled children, are Ashtabula, Hamilton, and Massillon.

are as follows: Barberton, Massillon, Marietta, Bellaire, Ironton, Kenmore, Niles, Coshocton, New Philadelphia, Bucyrus, Salem, and Urbana.

Only thirteen of the forty-eight cities between five thousand and ten thousand have special classes, while thirty-five do not. The former cities are Xenia, Kenton, Van Wert, Norwalk, Ashland, Wooster, Washington Court House, Troy, Ravenna, Circleville, Athens, Kent, and Greenfield. Possibly all the cities in this group do not have a sufficient number of mental deficients for a separate class. All, however, undoubtedly have enough mentally deficient and borderline cases together to make up a class. Most, if not all, could secure a sufficient number of mental deficients for a class by gathering them from the outlying school districts.

No city of less than five thousand has any classes except Euclid and Geneva, according to the replies. Probably in the large majority of cities in this group it would be feasible to establish only "combination" classes for mentally deficient, borderline, and very backward children, unless the mental deficients from the surrounding territory were brought in. The plan of centralizing the mental deficients is to be preferred whenever the children can be transported to one class.

From the investigation made, it is apparent that the large majority of mentally handicapped school children in Ohio are still retained in the regular

TABLE V

CRIPPLED CHILDREN RECEIVING HOME INSTRUCTION

City	Teachers	Pupils
(1)	(2)	(3)
Cincinnati	.....	2
Cleveland	5	5
Columbus	8	9
Dayton	5*	31
Delaware	.....	2
Dennison	1†	1
Findlay	.....	5
Lakewood	.....	3
Logan	.....	2
Lorain	.....	8
Mingo Junction	.....	4
Newark	.....	3
Norwalk	1	3
St. Bernard	.....	2
St. Marys	1	4
Warren	1	1
Washington Court House	2‡	1
Wooster	1	2
Total	25	88

*Teachers paid one dollar per hour. †Paid one dollar per lesson. ‡Teachers paid six dollars a week.

TABLE VI

CLASSES FOR THE BLIND OR THE VISUALLY HANDICAPPED

City	Classes	Teachers	Pupils	Bonus (Dollars)
(1)	(2)	(3)	(4)	(5)
Akron	1	1	12	.....
Alliance	1	1	8	.....
Ashtabula Harbor	.....	.....	3*	.....
Barberton	1	1	10	100
Berea†	.....	.....	.....	.....
Campbell (East Youngstown)	1	1	11	150
Canton	1	1	17	.....
Cincinnati	8	11	88	150
Cleveland	22	33	300	150
Cleveland Heights	1	1	13	.....
Columbus	2	2	20	100
Dayton	2	2	25	100-200
East Cleveland†	.....	.....	.....	.....
Euclid	.....	.....	3†	.....
Lakewood	.....	.....	2†	.....
Lima	1	1	12	100
Lockland‡	.....	.....	.....	.....
Lorain	2	.....	.....	.....
Mansfield	1	1	10	100
Middletown	1	1	12	.....
Nelsonville§	.....	.....	.....	.....
Norwalk	1	1	7	100
Norwood‡	.....	.....	.....	.....
Portsmouth	1	1	11	200
St. Bernard‡	.....	.....	.....	.....
Sandusky	1	1	12	250
Springfield	1	1	13	100
Toledo	6	6	.....	150
Warren	1	1	10	.....
Youngstown	5	5	50	.....
Total	61	73	649	.....

*Attend class for visually handicapped in Ashtabula. †Sends pupils to special classes in Cleveland. ‡Sends pupils to sight conservation classes in Cincinnati. §Sends pupils to sight-saving class in Columbus.

NOTE.—Hamilton and Oak Harbor, which did not reply, maintain special classes for the visually handicapped.

grades, or in sections of the regular grades in which they receive little, if any, differential training. Our returns show a total enrollment of 5,630 mentally deficient, borderline, and backward pupils in special classes. The correct number exceeds this somewhat, for the registration was not reported by some cities. Classes have been established in more than a dozen cities as a result of work done by the Psycho-Educational Clinic of Miami University.

Despite the fact that the program for remedial instruction and rehabilitation of mentally handicapped school children has not yet been inaugurated in the majority of school systems in Ohio, commendable progress has been made, although the State has thus far done very little, either by enabling legislation or state subvention, to encourage the establishment of special classes for the mentally handicapped. On the other hand, Ohio has granted more generous support of classes for the *physically* handicapped than any one state or any country. In some cities, the State has carried more than 85 percent of the expense of the classes for the physically handicapped. The extent to which classes for physically handicapped children are provided may be judged from the replies to the questionnaire as tabulated in Tables IV–VII.

The restricted and faulty nature of the provisions of the special-class legislation now on the Ohio statutes has been recognized by many organizations and by many school men of the State. In consequence of this feeling, a resolution was introduced at the last meeting of the State Teachers Association asking that a study be made of the present Special-Class Act and of the whole question of state aid for special classes. In the preliminary report made at the meeting of the Association last December, the committee recommended that the amount of state subsidy for physically handicapped children should be considerably reduced and that the act should be amended so as to include mentally handicapped children. That there is a general demand for such a subsidy is unquestionable. To the question, "Do you want state aid for classes for mentally handicapped children?" forty-six answered in the affirmative and only fourteen in the negative. With the exception of three cities, all of the negative answers came from those with a population of less than seven thousand. The bill introduced in the last two legislative sessions providing a slight amount of state aid for classes for the mentally deficient received widespread and hearty support. When introduced at the last session of the assembly it had the indorsement of more than thirty-three organizations, federations, and clubs representing a total membership of about two hundred and thirty thousand. On both

(*Continued on page 264*)

TABLE VII

CLASSES FOR DEAF CHILDREN

City	Classes	Teachers	Pupils	Bonus (Dollars)
(1)	(2)	(3)	(4)	(5)
Akron	2	2	19	150-300
Berea*	.....	.....	.....	.....
Canton	2	2	18	.....
Cincinnati	5	5	34	150
Cleveland	.....	18	147	150
Columbus	1	1	11	500
Dayton	1	3	26	100–450
East Cleveland*	.....	.....	.....	.....
Euclid	.....	.....	1*	.....
Findlay	2	.....	.....	.....
Girard	.....	.....	1†	.....
Nelsonville	.....	.....	1‡	.....
Norwood§	.....	.....	.....	.....
Piqua	1	1	7	300
Springfield	1	1	7	300
Toledo	2	2	.....	150
Warren	1	1	9	.....
Youngstown	1	1	7	.....
Total	19	37	288	.....

*Pupils sent to special schools in Cleveland. †Sent to class for deaf in Youngstown. ‡Receives home instruction three hours per week. §Pupils sent to class for deaf in Cincinnati.

NOTE.—Classes for deafened children are also maintained by Oak Harbor.

Ohio State University

Educational Research Bulletin

Published fortnightly, except during June, July, and August, with but one issue in December, for the schools of Ohio by the Bureau of Educational Research, College of Education, The Ohio State University, Columbus.

B. R. BUCKINGHAM . . . . *Editor*
JOSEPHINE MACLATCHY . *Assistant Editor*

Address all communications to the
BUREAU OF EDUCATIONAL RESEARCH
Ohio State University, Columbus, Ohio

THE EDITOR TURNS PROFESSOR

THE nine o'clock chimes have scarcely ended their morning salute when the peace of the editorial sanctum is invaded by the clerk from the outer office. "Mr. Blank to see you by appointment," says she. The editor, whose editorial position is considerably subordinate to his professorial duties, recalls that this is his office hour—a period set apart expressly for the conversationally minded students. Evidently this is an interview which cannot be evaded.

Enter Mr. Blank. "Good morning, Mr., uh, Mr."—What was it Miss Graham said his name was? Mr. Blank obliges, and the editor takes time out to jot down the name where he can see it and make apparently spontaneous use of it during the subsequent interview.

"You have an appointment with me this morning, Mr. Blank?" Mr. Blank confirms the fact, already sufficiently attested, that he has; and without undue delay gets down to business.

"I've got to write a Master's thesis," says he, "and I'd like to talk to you about a topic." The statement ends with a slight upward inflection as if, in spite of its grammatical form, a sort of question were implied. After an awkward pause Mr. Blank repeats that he would like to talk about a thesis topic. Whereupon the editor suggests that he go ahead and do so.

It transpires, however, that the editor-professor has misconceived Mr. Blank's meaning. He has no topic to talk about. In fact, instead of coming with a topic, he has come to get one. He looks so expectant, too; purely, as one might say, in a receptive mood.

No, he has no problems to suggest. He gives one the impression of having just learned about this thesis business, and of being entirely open-minded on the subject. At least, one gathers he has no bias toward any particular topic and certainly no preconceived notions.

A conversation ensues. The editor—playing for the nonce his professorial role—asks in what department Mr. Blank is majoring, what courses he has taken, what positions he has held, and for what type of educational service he is fitting himself. At one stage of the resulting exchange of ideas Mr. Blank brightens. With some modesty, yet with the undeniable air of a discoverer, he suggests that he might correlate intelligence and achievement in the high school. He could give some tests in the school with which he is connected; and his friend, the principal of the X school, would probably let him give some tests there; and maybe he could get one or two more schools if he stopped to think about the matter. And, O yes! how many schools does the professor think would be needed to get results that you could depend on? On being told that intelligence and achievement—so far as either are now measurable—have already been correlated by hundreds of people, Mr. Blank helplessly withdraws within himself, a discouraged seeker after truth in a world where all the problems have been solved.

Mr. Blank is a type. There are others. There is the student who has a topic, or at least has thought about one, but whose topic is trivial. Here the professor is on dangerous ground. No problem, if it is truly a problem, is valueless; and if a student has a real desire to work on a

relatively unimportant problem, he should be allowed to do so—provided, of course, it is feasible and has not already been solved. Ordinarily, however, students have no strong convictions as to the problem upon which they wish to turn the light of investigation. Moreover, it is not to be denied that in their bearing upon the real work of education some problems are far less vital than others. One may hazard the opinion that "The Legal Status of the School Board Member" is a less significant topic even for the administrator than "Teachers' Meetings as Means of In-Service Training" or "Classroom Visiting."

Then there is the student whose topic is so broad that no penetrating treatment of it is possible. Probably both of the subjects just suggested would be still better if they were more sharply delimited. McCall tells of a person—he calls him an "experimenter," but it is suspected that he was a graduate student—who formulated this problem: "What Is the Effect of Various Factors upon Learning?" After a little urging, says McCall, he departed and returned later with this formulation: "What are the effects of distribution of time upon learning?" At a later stage the problem became; "Will a typical fourth-grade class in silent reading, spending three thirty-minute periods per week, accomplish more or less than an equivalent class spending five periods of eighteen minutes each per week."

There are still other types of students who impinge upon the editor in his office hours as professor—the student whose sole idea of the means of getting data is the questionnaire, the student whose topic is real but incapable of solution with the means at his disposal, the student who, without a sense of values or meanings, has only his industry to commend him. This last type will labor without ceasing; he will cover hundreds of data sheets and filing cards, and, if you set him at computing, he will figure long and furiously; but his labor is vain, because his data sheets, his cards, and his figures are without meaning to him.

And then there is the student who may or may not come with a problem, but who in any event has benefited by his experience and thought as he studied. He has a sense of values. He is a worker, but he glorifies drudgery by his enthusiasm. The editor-professor knows no keener delight than working with him. He gives him a push here, and a prod there; but mostly he just watches him grow. This student is the compensation for all the ills that professorial life is heir to. When he turns in his thesis, one tries to look severely critical and can't manage to do so. When he steps up to the President on Commencement Day to receive his degree one feels a glow of pride, and later a sense of loneliness. Something has gone from one's life. Will there be another to take his place?

***

The what-do-you-know? column and "intelligence test" has become as much a part of the special features sections in our daily papers as the cross-word puzzle formerly was. Just what effect such tests will have upon serious testing within the schools is a question that is raised by E. C. Witham, director of the Department of Research of Wilmington, Delaware, in the following communication to Dr. Buckingham:

> We have been giving intelligence tests to our seventh- and eighth-grade pupils for the past ten years. This noon, on my way to the office, I saw on display in the leading bookstore, a veritable window full of popular books made up of intelligence tests. One of them is, *Are You Intelligent?* The author is not given, but Howard W. Haggard, assistant professor in the Department of Applied Physiology at Yale, has a prefatory note in the book. Another title is *Ask Me Another*. This is perhaps less professional and more popular; it is in two volumes. *Quiz Book* and *What Is the Answer?* also go to

make up the five different exposures of the present epidemic for adults. In the children's department there is another grist of the same kind. These are not spurious books, by unreputable houses. Some of the biggest and best publishers are grinding out these little books at profitable prices.

What is going to be the effect of this unprofessional epidemic of intelligence tests? What will be the effect on our more serious school testing? It looks to me as though for the next five years further serious school work along this line is going to be undermined. There are several reasons why this may prove to be so. What do you think about it?

On the back cover of *Are You Intelligent?* is the following: "Rate yourself on the actual tests used in the Department of Applied Physiology at Yale University." How will this publication affect future tests at Yale?

High-grade physicians do not write family medical books. Are family psychological books comparable?

THE BUREAU OF EDUCATIONAL RESEARCH IN 1926-27

ACCORDING to our custom, we are presenting in the first issue of the Bulletin for this academic year a review of the work of the Bureau of Educational Research of Ohio State University during 1926-27. We do this because we know from the testimony of many that our friends are interested in hearing about the activities in which we have been engaged.

CHANGES IN PERSONNEL

More than the normal amount of change in personnel occurred during this year. At the close of the summer of 1926 both of our research assistants, H. C. Koch and S. S. Brooks, left us. Mr. Koch finished his doctorate and accepted a position as assistant professor of education in Teachers College, University of Nebraska. Mr. Brooks resigned and went to the Junior College at Muskegon, Michigan. In their places we appointed J. A. Baer, who had been assistant county superintendent in Cuyahoga County for some years, and L. J. LaPoe, who had been a graduate student at the University of Pittsburgh during the previous year. Both men have fitted admirably into the organization, and each has brought through one or more significant pieces of research. Miss Eve Finson, who was our editorial assistant, resigned during the summer of 1926, and Miss Marian SeCheverell, of the University of Wisconsin, succeeded her.

In January, the Bureau lost one of its major men, Dr. P. R. Stevenson, by death. After a search of several months extending over the entire country, Dr. T. C. Holy, director of housing and fixed equipment of the St. Louis public schools, was selected as the man most thoroughly qualified to take Dr. Stevenson's place. Dr. Holy began his services with the opening of the Summer Quarter, and he has already contributed much in teaching work and field service.

A considerable amount of field service was rendered during the past year. In October, Dr. Ashbaugh and Dr. Stevenson made a survey at Belpre for available sites for a proposed school building. During the Spring Quarter, Dr. Ashbaugh, assisted by our research assistants and graduate students from the Department of School Administration, did the field work for building-program surveys at both Marion and Lancaster. Reports of these surveys are being completed by Dr. Holy who will have charge of such work in the future.

EDITORIAL DIVISION

The work of the Editorial Division was heavier this past year than ever before. This division handled, in an editorial way, more than four thousand pages of typewritten material and more than twenty-five hundred pages of proof. This material comprised the EDUCATIONAL RESEARCH BULLETIN, the *Proceed-*

ings of the Sixth Ohio State Educational Conference, the *Journal of Educational Research*, and three monographs of the Bureau of Educational Research Monograph Series. The monographs were as follows: *Campaign Publicity for Schools*, by P. R. Stevenson; *The Organization of State Departments of Education*, by H. E. Schrammel; and *Organized Research in Education with Special Reference to the Bureau of Educational Research*, by H. B. Chapman.

The extent to which the contents of the Bulletin are copied by other educational journals is perhaps the best evidence of its worth. During the past year, twelve educational publications have reprinted in their entirety certain editorials and articles. *Catholic School Interests; Country Teacher; Bulletin of the Classroom Teachers' Association; Educational Research Bulletin*, of Pasadena, California; *School Review; Omaha School Forum Quarterly; Ohio Teacher; Vocational Guidance Magazine;* and *Teachers' Journal and Abstract* are among the periodicals which so honored us. Thirteen universities requested complete sets of the Bulletin for binding for their libraries.

Reference Division

The Reference Division of the Bureau has been equally busy. Miss Voegelein has completed the list of educational subject-headings upon which she has been working for several years. It has been accepted for publication by the Ohio State University Press and should appear at an early date. Our educational index has been kept up to date by the workers in the Reference Division. Articles in all educational periodicals and bulletins received during the year were indexed and the reference file is richer now by nearly twenty-five thousand cards. Thirty-two formal bibliographies, with a total of 1,231 entries, were compiled on specific requests. These requests came from persons in almost every type of educational service—university presidents, university professors, members of state departments of education, city boards of education, city superintendents, high-school principals, teachers, and librarians. More than five thousand books and bulletins were added to the library during the year and twenty new educational periodicals were entered on our exchange list.

Appointments Division

The Appointments Division has likewise been busy. Since the publication of the last Bulletin the head of this Division, J. L. Clifton, has been appointed State Director of Education and his successor in the Appointments Division has been chosen. The new head of this division, Dr. E. W. Anderson, comes to us from a similar position at the University of Kansas. He will assume his duties October 1. More than three hundred people received appointments to positions during the past year. That number does not include those whose credentials were furnished, but for the placement of whom this Division does not claim full responsibility.

Research Projects

Projects 1 and 2. Class-size and school publicity.—Owing to the fact that Dr. Stevenson was ill from the beginning of the Fall Quarter until his untimely death the middle of the year, no work on these projects was conducted.

Project 2. (Old Series) Departmental teaching.—This project involved a comparison of subject teaching and grade teaching under controlled conditions. Through the courtesy of Superintendent R. G. Jones, the Murray Hill School at Cleveland was utilized for this purpose. The period of experimentation lasted a year and a half. The work was under the direct charge of A. W. Stewart who submitted the report as a Doctor's dissertation during the past year. The results of the study were not wholly

conclusive. While the testing done at the end of the first and second semesters indicated that grade teaching was more effective, the testing at the end of the third semester indicated that perhaps much, if not all, of the inferiority in the departmental work was due to the unfamiliarity of both teachers and pupils with the new procedure. There is need for further experimentation involving situations in which students are equally accustomed to the two types of procedure.

Project 3. A comparison of kindergarten and non-kindergarten children in the primary grades.—This project, which has been under way for four years has been completed, and a formal report has been made by Miss MacLatchy, who had direct charge of the work. The report will be submitted to the University Press for publication in the Bureau of Educational Research Monograph Series as Monograph No. 8.

Project 46. The influence of absence on school work.—Early in the school year Dr. Ashbaugh solicited the cooperation of twelve county superintendents in the State on this project. The Bureau furnished the material and the superintendents gave certain standardized tests to children in one-room and consolidated schools in the fall and again in the spring. A report was also rendered on the attendance and the home conditions of the children to whom the tests were given. The test material has all been scored and the comparisons are now under way.

Project 52. Teaching load in high schools.—The materials for this study were taken from the data secured in 1925 for Project 7. They have been tabulated by sexes and subjects for the junior and senior high schools separately. Variations, central tendencies, and correlations have been computed, and a full report will be made in connection with the report on Project 55.

Project 54. The relation of training to subjects taught.—The data for this project were also secured from the same source material as Project 52. The work has been completed and will also be reported in connection with Project 55.

Project 55. For what are teachers paid?—The individual record cards showing training, experience, subjects taught, and teaching load of more than eight thousand teachers have been studied in connection with this project. By the partial correlation technique, regression equations have been written for junior and senior high-school teachers. Experience is shown to be the dominating factor in determining salary. In some cases training is a significant factor, but teaching load is negligible. In elementary schools the kind of position and the teacher's experience are the dominant salary determinants. Up to twelve-years experience with junior high-school teachers and seventeen-years experience with senior high-school teachers, the relation between experience and salary approximates linearity. A complete report on Projects 52, 54, and 55 will probably be included in a monograph issued during the coming year.

Project 57. Bureaus of educational research.—This study has been carried to completion. The report was written by H. B. Chapman who submitted it as a Doctor's dissertation a year ago. This report is being published by the University Press as Bureau of Educational Research Monograph No. 7.

Project 58. Minor problems in arithmetic.—A number of small problems have been attacked under this head. Only one, however, has been carried to the point of publication. This was on the question of whether addition and subtraction facts should be taught together or separately. The report appeared in the issue of this Bulletin for May 25, 1927, in an article by the Director of the Bureau. Data on two

other topics are in hand and the reports will appear shortly. These are "Upward versus Downward Column Addition" and "Teaching Addition and Subtraction Facts Together or Separately."

Project 59. The inherent difficulty of learning to spell certain words.—Tabular results from a large number of children were secured on an assigned list of words in schools where a particular spelling procedure was in operation. This procedure provided for testing on the given list on five occasions with three specific study periods devoted to words missed on previous testing. The data are now in the Bureau and will be made the basis of study during the coming months.

Project 60. Junior and senior high-school English.—On this project Dr. Ashbaugh has secured approximately fourteen hundred letters written by junior and senior high-school children throughout the United States and sent to their friends through the mail. These letters present the type of English which children of these grades use when writing on their own initiative and not as a requirement of the school. Since the children know that these letters are to be judged by their peers and not by teachers, it is thought that they represent the best measure of the teaching of English as it functions in the lives of these children. The letters are being analyzed for vocabulary, sentence structure, spelling, and punctuation.

Project 60. (Old Series) Problems in high-school administration and supervision which have their origin in the classroom.—This project was completed under the direction of H. C. Koch, who presented the results in the form of a Doctor's dissertation. Among the significant findings are: Men have as great a number and variety of problems as women. The character of the difficulty is the same for both sexes. In so far as the nature and frequencies of disciplinary problems are concerned, there is no particular advantage in having like sex deal with like. Problems fall into two general groups: (1) those common to all teachers regardless of the subjects they teach and (2) those which are more or less closely defined by these subjects. The former are related to such topics as physical conditions, management, and extra-curricular activities, while the latter have to do with curriculum, course of study, and teaching method. Pupil management takes precedence over all other types of problems.

Project 61. Teacher personnel problems.—This study is being sponsored by the National Committee on Research in Secondary Education and by the Ohio Schoolmasters' Club. Among the factors under consideration are the reasons why men leave the teaching profession, the reasons for the selection of teaching as a profession, extra-curricular activities, professional and community responsibilities, and attitude of the public. The investigation is being carried on by J. A. Baer as a dissertation project and should be completed during the coming year.

LOOKING BACK ON THE SEVENTH ANNUAL OHIO STATE EDUCATIONAL CONFERENCE

IT seems a long time since April 7-9, but our justification for reporting the Seventh Annual Ohio State Educational Conference held at that time is twofold. First, many of our readers were unable to attend the Conference; and, second, the last issue of the Bulletin for the past school year went to press before it was possible to analyze and write a satisfactory report of the meetings.

The keynote of the Conference, "Expertness in Teaching," was the

central theme not only of several addresses at the general sessions, but also of several of the programs in sectional meetings. Speakers on the general program were R. J. Condon, superintendent of schools, Cincinnati; William Allen White, editor, *Emporia Gazette*, Emporia, Kansas; Payson Smith, Massachusetts Commissioner of Education; E. L. Thorndike, Teachers College, Columbia University; W. W. Atwood, president, Clark University; Harry Olson, judge, Chicago Municipal Court.

Publicity for the Conference was started early in the school year. Five thousand special invitations and fifteen thousand letters and announcements were sent to school people throughout the country. Newspaper publicity was largely handled through J. E. Pollard, director of the News Bureau of the University. While the clippings received are doubtless incomplete, an analysis of them showed that one or more notices appeared in papers of sixty-seven different cities within the State.

Thirty-two sections arranged for one or more programs on Friday. The sections for city superintendents, nonbiological science, physical education, and school business officials arranged for both forenoon and afternoon sessions. Twenty-three speakers were secured from without the State to present material of interest to the special groups.

An analysis of the total registration for the past five years is given in Table I. From the figures shown, it is seen that the total registration reached a higher mark this year than ever before. The increase since 1923 is almost 57 percent. At this year's Conference, twenty-four cities each had a registration of twenty or more, which is the largest number of cities with a high registration that has ever before been represented. The distribution of registrants from over the State was very good. Only five counties failed to have a representative at the Conference, while twenty-one counties were represented by communities sending twenty or more people. When the registration was analyzed by types of position it was seen that village superintendents, high-school principals, junior high-school principals, elementary principals, high-school teachers, junior high-school teachers, and elementary teachers were all represented by a larger registration in 1927 than ever before.

The following statements are taken from letters which were received following the Conference. They express the sentiments of a few of the people who attended. W. W. Atwood, president of Clark University, commented thus:

> I thoroughly enjoyed my visit to Columbus and the meetings which I attended. I found both audiences unusually keen and attentive, and I recognized that they were made up of the superior teachers and educators of the State.

Payson Smith, Massachusetts Commissioner of Education, wrote:

> I enjoyed greatly the day which I spent at your Educational Conference which impressed me deeply with the extent of its influence on the schools of Ohio.

Miss Fannie W. Dunn, of Teachers College, Columbia University, made the following statement:

> I want to tell you how very much I enjoyed my brief stay in Ohio and how interested I am in the sound professional work which the University is fostering in the State.

TABLE I

TOTAL REGISTRATION AT CONFERENCE FROM 1923 THROUGH 1927

Year	Columbus	Outside Columbus	Total
(1)	(2)	(3)	(4)
1923	1,333	1,327	2,660
1924	1,438	1,419	2,857
1925	1,961	1,760	3,721
1926	1,532	1,940*	3,472*
1927	1,839	2,324	4,163

*Estimated on basis of registration in certain sections as compared with total in previous years.

Neil E. Gordon, editor of the *Journal of Chemical Education*, spoke of the Conference in general and, specifically, of the section which he addressed:

> To say that I was pleased to be with you and make some little contribution to your most excellent program would be expressing it mildly indeed. It was one of the best educational meetings from the standpoint of chemistry that I have ever attended and I understand that the other parts of the program were equally good.

J. E. Bradford, secretary of the United Presbyterian Board of Education, Chicago, sent in the following comment:

> I wish to signify my appreciation of being privileged to have a part in this Conference which I enjoyed very much indeed. You are certainly to be congratulated in the work which you are doing on behalf of education throughout the State. As a son of Ohio and one long connected with her educational work, I feel a natural pride in whatever contribution she is able to make to the cause of education.

The executive committee is already at work on the program for next year. It is hoped that a larger number of readers of the Bulletin will find it possible to attend the 1928 Conference than has ever attended in any preceding year.

THE SENIOR HIGH-SCHOOL PRINCIPALS' PROFESSIONAL MAGAZINES

JAMES L. LA POE
Ohio State University

THE returns upon which this study is based were received from the principals of 381 senior high schools to whom questionnaires were sent. The schools are located in 375 cities, and they include all of the states and the District of Columbia.

The purpose of the paper is to offer, so far as the data in hand permit, an answer to each of two questions. First, of ten designated professional journals, which ones are most read by senior high-school principals? Second, which of the ten periodicals do they regard as most helpful to them in their work?

TABLE I

CIRCULATION AND HELPFULNESS OF PROFESSIONAL JOURNALS AS REPORTED BY 381 HIGH-SCHOOL PRINCIPALS

MAGAZINES	FREQUENCIES OF MENTION		PERCENTS	RANK
	Without Respect to Helpfulness	With Respect to Helpfulness	(Column 3 divided by Column 2)	
(1)	(2)	(3)	(4)	(5)
School Review	275	125	45.5	1
Educational Administration and Supervision	109	35	32.1	2
American School Board Journal	245	52	21.2	3
Teachers College Record	111	22	19.8	4.5
Journal of Educational Research	101	20	19.8	4.5
Journal of Education	96	18	18.8	6
Educational Review	152	22	14.5	7
School and Society	135	18	13.3	8
State Journals of Education	279	34	12.2	9
Education	87	9	10.3	10

The names of the ten professional journals are shown in Table I. This table also indicates—Column 2—the number

of principals who read each of the periodicals. Column 3 of Table I indicates the number of principals who, in our questionnaire, underscored each magazine as being the most helpful.

In Column 2 we note that *School Review* was mentioned by the largest number of these high-school principals, 275 out of a total of 381. The *American School Board Journal* was second in frequency of mention.[1] Column 3 of Table I is particularly interesting since it shows the helpfulness of the various periodicals. *School Review* was underscored most frequently. This was true not only in the total figure but also in the details. Principals of both large and small high schools agreed as to the helpfulness of this periodical. On the other hand, as the table indicates, *Education* was underscored least often by the 381 principals.

When we divide the entries in Column 3 by the corresponding entries in Column 2 we get a percentage index, which gives a truer indication of helpfulness than we gain from the gross numbers. By this means two relationships are shown, the usefulness of a given journal in comparison with the extent to which it is read and the usefulness of a journal compared with the usefulness of other journals on the list. These percents have been computed and appear in Column 4 of Table I. *School Review*, as is seen, has the highest percent. In other words, the greatest proportion of the readers of this journal regard it as their most helpful magazine. The lowest percent is found in connection with *Education*, and the other journals take intermediate positions as indicated in the table.

The final ranking of the publications by the principals, as shown by the last column of Table I, is here compared with the rank of the same journals as reported by Dr. Trabue and Dr. Ashbaugh with respect to the number of research articles that appeared in them during 1924 and 1925.[2] The principals made their evaluation during the winter of 1925-26. Dr. Ashbaugh and Dr. Trabue listed a large number of magazines. We have, however, left out of consideration all but the ten really nine when we exclude the state journals, already mentioned.

The arrangement of the nine magazines, when ranked in the manner just indicated, is found in Table II.

TABLE II

HELPFULNESS IN COMPARISON WITH RESEARCH ARTICLES

MAGAZINES	HELPFULNESS (Col 4, Table I)	NUMBER OF RESEARCH ARTICLES	
		1925	1924
(1)	(2)	(3)	(4)
School Review	45.5	24	28
Educational Administration and Supervision	32.1	23	12
American School Board Journal	21.2	7	4
Journal of Educational Research	19.8	47	51
Teachers College Record	19.8	14	7
Journal of Education	18.8	*	*
Educational Review	14.5	*	2
School and Society	13.3	26	18
Education	10.3	1	2

* Not mentioned.

What can we conclude from Table II, as an answer to our question relating to the helpfulness of research magazines? The following points occur to the writer. No doubt, the reader may discover others.

1. Of the three leading research journals, only one is among the three which lead in helpfulness.

2. The leading research journal, considering only these ten publications, ranks as 4.5 in the principals' ranking.

3. The second highest research magazine is ranked eighth by the principals.

[1] The entry in Table I, *State Journals of Education*, does not mean one periodical. It refers to the state journal in the particular state in which each high school was located.

[2] Trabue, M. R. "Educational Research in 1925," *Journal of Educational Research*, 13:336-44, May, 1926.

4. The third highest journal in the principals' column is sixth in research.

5. *Education* and *Educational Review* occupy relatively low positions in all rankings.

6. *Teachers College Record* consistently maintains a middle position in all rankings.

7. *School Review*, the only journal among those considered here that is restricted to secondary education, is read by slightly more than 72 percent of all the principals.

8. Finally, if we omit *School Review*, the one magazine specifically limited to the high-school field, it seems doubtful whether these high-school principals find the leading research journals to be the most helpful.

EDUCATIONAL READINGS

POPENOE, HERBERT. *A Report of Certain Significant Deficiencies of the Accomplishment Quotient*, *JER*, 16:40–47, June, 1927.

The writer reports an important study, with more than six hundred pupils ranging from the third to the eighth grade, which was made to test the validity of the accomplishment quotient as a significant measure in educational research and school administration. As a result of the experiment which was conducted "under thoroughly standardized conditions by expert elementary-school counselors of considerable experience," the principal conclusion is that "in so far as may be judged from the results of this study, the administrative use of the accomplishment quotient is open to serious criticism."

WINCH, W. H. *Can Observation Be Trained in School Children?* *JER*, 15; 314-26, May, 1927.

In this experiment a class of boys, under one teacher, was divided into two equal and parallel groups on the basis of the work done in three preliminary tests in observation. One group then worked six practice exercises in arithmetic, while the other group worked six practice exercises in observation. The two groups then worked together in three final tests in observation. The children used in this experiment were students of a medium-sized boys' school in the suburbs of London. The general conclusion from this experiment was that the boys of the practice group gained decidedly in observational power as contrasted with those of the non-practice group. A similar experiment was conducted with girls with the result that "the training by practice exercises in observation has produced a definite and indeed a great improvement in the observation of things which have always been in the way of being observed by the children and which may have already been noticed by them with more or less attention and precision."

MILLER, H. W. *Segregation on the Basis of Ability*, *S & S*, 26:84–88, 114–120, July 16 and 23, 1927.

This article describes two extensive experiments conducted by the College of Engineering of the University of Michigan. These experiments were continued over a period of one semester and involved 350 freshmen engineering students. Some findings of the study are: superior students in at least technical subjects and probably in all subjects can derive an additional profit of 33 percent when segregated; the relatively easy method of segregating pupils on the basis of previous college accomplishments is satisfactory; and the sons of fairly well-educated parents are not doing so well, one might even say half so well, as the sons of relatively uneducated parents.

ROREM, S. O. *The Grade-Leader Plan*, *S&S*, 26:205–207, August 13, 1927.

A new scheme of elementary-school supervision is described by Superintendent Rorem. Its purpose is "to draw from all teachers the best they have within them and to throw a decent share of responsibility upon the teachers' shoulders." It is another attempt to apply the principles of democracy in school supervision. Each of the first six grades elects four teachers to act as the grade committee; one of the four is selected by the superintendent to be the committee chairman-secretary, or grade-leader. The leader meets with the superintendent once each month; with the committees twice each month; and with all teachers of the first six grades, once each month. The leaders are paid a "recognition fee" of twenty-five dollars each semester. The purpose of the committees and meetings is to study the problems that arise in each grade and to propose methods of procedure. Thirteen outcomes are listed as resulting from the uses of this plan; it seems to have been very successful.

NOTE.—The abbreviations used in this number are: *JER*, Journal of Educational Research; *S&S*, School and Society; *SR*, School Review; *TCR*, Teachers College Record; *JEP*, Journal of Educational Psychology; and *EAS*, Educational Administration and Supervision.

CLEETON, GLEN U. *The Predictive Value of Certain Measures of Ability in College Freshman*, JER, 15:357–70, May, 1927.

The experiments described in this report deal with problems concerning the predictive value of certain measures of developmental capacity and measures of attainment. College Freshmen are used as subjects; and intelligence examination scores, scores on the High-School Content Examination, and scholarship scores are indices of ability and attainment. Among the results shown in the summary are: (1) the measures of capacity used predict measures of success in a one-year pre-engineering course as follows: Thorndike Intelligence Examination .50, Iowa High-School Content Examination .50, (2) when the weighted Thorndike Intelligence Examination and Iowa High-School Content Examination scores are combined the predictive value seems to lie somewhere between .60 and .65; (3) the sum of the mathematics and science scores of the Iowa High-School Content Examination requiring a net working time of forty minutes predicts success in a first-year pre-engineering course with greater efficiency than does the total Thorndike Examination score or the total Iowa Content score, the latter two representing more than three hours of net working time respectively.

ASHBAUGH, E. J. *Non-School English of High-School Students*, JER, 15:307–13, May, 1927.

This article presents results of an effort to ascertain a measure of the teaching efficiency in the field of written English. The bases used to determine this measure of efficiency were letters which children wrote to their friends and sent through the mails. An analysis of one hundred letters from each of Grades VIII, IX, and XII is presented in this article. Some of the conclusions shown in the summary are that most of the letters were written by girls to girls; that the length of the letters increased from the seventh to the twelfth grade; that periods are omitted both after abbreviations and declarative sentences at the rate of one to every six places in which they are needeed, and that the percent of running words misspelled was 2.6 in Grade VII, 1.7 in Grade IX, and 1.4 in Grade XII.

NASH, H. B., AND PHILLIPS, M. J. W. *A Study of the Relative Value of Three Methods of Teaching High-School Chemistry*, JER, 15: 371–79, May, 1927.

The three methods described are: "The Pupil Method," in which the members of the group were allowed to study as they wished; "The Combination Method," consisting of demonstrations in the lecture room, individual laboratory work with simple experiments and group laboratory work; and "The Instructor Method," in which units of work were assigned from the text and the pupils were never called upon to recite. In the latter method, no check was taken to determine whether the lessons assigned were prepared or not, neither were any individual laboratory experiments performed. It should be observed that the second method is the most common method now in use. The results show that the mean gains between the initial test and the final test in the Pupil Group was 25.6; in the Combination Group, 32.3; and in the Instructor Group, 34.1.

BRODELL, ALEXANDER. *Science Department Meetings*, SR, 25:428–47, June, 1927.

An unusually complete and suggestive outline for the conduct of science-department meetings is given the reader of this article. Each topic that is suggested is followed by a number of specific references to articles and investigations relating to that topic. The heads of other departments in the high school should receive valuable assistance from a study of this outline in the planning of meetings of their respective departments. Principals of high schools should likewise receive guidance in arranging faculty meetings according to well-defined objectives and a definite program for the year.

KNOX, W. W. *The Demonstration Method versus the Laboratory Method of Teaching High-School Chemistry*, SR, 35:378–86, May, 1927.

The investigation here reported was carried on in four regular high-school chemistry classes of equal ability as measured by the Miller Mental Ability Test. These classes were taught by two teachers. Each teacher had one demonstration and one laboratory class. Both teachers used the same classroom procedure as far as possible. In order to measure the relative merits of the two methods, three types of tests were employed—tests to measure immediate retention, delayed retention, and method of attack. As a result of these tests, the demonstration method proved equal, if not superior, to the laboratory method in all but one instance. The laboratory method proved slightly superior in method of attack in the case of the "average inferior" pupils.

KOOS, LEONARD V., AND TROXEL, OLIVER L. *A Comparison of Teaching Procedures in Short and Long Class Periods*, SR, 35:340–53, May, 1927.

The outstanding conclusion of this investigation seems to be that schools in which the short period prevails are not justified in "postponing the introduction of innovations associated with supervised study on the sole ground of the brevity of periods." A comparison is made between the procedure in classes where, by reason of the longer period—fifty-five to sixty minutes, supervised study was presumed to be in effect and the procedure in classes employing the usual forty

to forty-five-minute period. It is rather surprising to note that in the short-period classes 11.9 percent of the time was used for assignment, while only 10.1 percent was devoted to assignment in the long-period classes. Moreover, the writers show that an average of four minutes was devoted to directed study in short-period classes while an average of thirteen minutes was used for the same purpose in the long-period classes.

KITSON, HARRY D. *Vocational Guidance through School Subjects*, TCR, 28:900–15, May, 1927.

The regular school subjects lend themselves readily to a certain amount of vocational guidance. Examples are given showing how geography introduces the vocation of locomotive engineer; American history introduces banking; ancient history leads to architecture; and Latin points the way to stenography and the secretaryship. Many other interesting adaptations are made in the article, but this is a sample of the possibilities.

ORLEANS, JACOB S. *Influence of Grade Progress on Achievement of Subnormal Pupils*, TCR, 28:916–27, May, 1927.

A pairing of pupils of the same chronological and mental ages, but in different grades, shows that the pupils in the higher grades usually make higher scores on standard achievement tests. Other factors than mental ability are important in school success, and the schools must recognize and make allowance for this fact until such time as more and better studies on achievement are available.

ENGELHARDT, N. L., AND ENGELHARDT, FRED. *Principles Governing the Indebtedness of Local School Systems*, TCR, 28:928–48, May, 1927.

"The ideal basis on which a public-school system should be financed is that each year the plan should provide that the public pay its proportionate share of the total cost of education. Accounting procedure must provide the facts to determine what that amount shall be. In this way, a combination of the pay-as-you-go, the reserve, and bond-issue plans will be united into a scheme whereby a school plant can be provided at minimum cost and be maintained for continued efficient service without interference or interruption of the current educational program."

ROSS, CLAY CAMPBELL. *An Experiment in Motivation*, JEP, 18:337–46, May, 1927.

This experiment purposed to procure data which would indicate whether advising a pupil of the progress he is making is one form of motivation. The results reported in this article show that, in so far as the scores made by the small group of students used in the experiment may be considered as an answer to the question, knowledge of progress made is one form of motivation.

WILLIAMS, LEWIS W. *Some Major Problems of Supervision*, EAS, 13:327–31, May, 1927.

In this paper, the writer maintains that the outstanding problem confronting public education today is not curriculum construction, the testing movement, sectioning of classes, or the junior high-school plan, but the training of teachers. Supervision is an individual, not a group, affair, and those persons charged with the training of prospective teachers must bear this in mind. The "radical difference" between the practice teaching and the other courses in college is emphasized; this difference constitutes a real problem in teacher training.

PURDOM, J. LESLIE. *Teacher-Training through Directed Observation of Teaching, through Teaching under Faculty Supervision, and through Practice Teaching as an Apprentice*, EAS, 13:317–21, May, 1927.

In this paper, the Principal of Harris Teachers College states the recommendations which have been made to St. Louis for the training of its elementary teachers. The recommendations urge that the completion of 124 college semester credits, 90 of which must be in so-called content and cultural subjects, be required of every prospective teacher; that the professional courses be distributed throughout the four years; that directed observation of teaching be required during the first three years in connection with the professional subjects studied during this period; that, at the completion of the observation requirement, the prospective teacher be required to teach a minimum of fifty-four lessons under faculty supervision; and finally, that the teacher be required to serve as an apprentice for twenty weeks, which apprenticeship shall not necessarily be under the direction of the college.

HOLT, HAMILTON. *Ideals for the Development of Rollins College*, S & S, 26:153–56, August 6, 1927.

In this article, the President of Rollins College sets forth some of the policies proposed for the development of this college, whose enrollment has been limited to seven hundred students. It is planned to secure instructors who are real teachers and "to build the most beautiful campus that Mediterranean architecture and landscape gardening can devise." Of special interest to college administrators is the decision of this college to abolish the lecture and recitation system and to substitute for it the two-hour conference plan. During the two-hour period the students engage in study, discussion, and the preparation of outlines in conference with the instructor. This plan is still in the experimental stage, but, while problems have arisen that must be solved, "no difficulties have so far presented themselves that seem irremedial."

IN PAPER COVERS

MACLEAR, MARTHA. *The History of the Education of Girls in New York and in New England, 1800-1870.* Washington, D. C., Howard University Press, December, 1926. 123 pp.

Such a booklet as this brings home anew the remarkable change in the status of women during the past century. Miss MacLear has brought together many interesting facts from a wide variety of sources and presents her material in a very readable way. The bibliography is extensive and seems also to be quite inclusive.

TEACHERS COLLEGE, COLUMBIA UNIVERSITY. *Curriculum Problems in Teaching Mathematics.* Second Yearbook of the National Council of Teachers of Mathematics. New York, Teachers College, Columbia University, 1927. viii + 297 pp.

"The Committee tried to obtain contributors holding many different points of view and representing as widely separated sections of the country as possible. The result can be labelled neither liberal nor conservative. Thus, in Part I, which is devoted to arithmetic, we have reflected the point of view of the trained supervisor, the psychologist, the classroom teacher, and the college professor. In Part II, on the mathematics of the junior high school, we find represented the attitude of the classroom teacher, the supervisor, the public-school administrator, and the college professor. Part III, which deals with senior high-school mathematics, presents the problems as seen by the college professor, the private-school administrator and teacher, and a committee of classroom teachers studying the needs of the public-school curriculum."

STONE, J. RAY. *Training Workers through Part-Time and Cooperative Education: Some Types of Schools with Suggestions for Organizing Courses.* Columbus, Ohio, Ohio State University, 1926. (Department of Vocational Education, Vol. I, No. 1)

This monograph sets forth the technique and procedure in determining the need for, and organization of, programs for the training of young workers who spend part of their time in employment and the other part in school. A number of case studies of such schools in Ohio are given which show their development and interpret clearly each step in their progress. The importance of occupational training is clearly pointed out for those who leave school before completing the prescribed course of study in a full-time school, as well as for those who wish their high-school course to prepare definitely for vocational work.

This study ought to be of particular interest to educators and personnel workers who are interested in vocational and industrial training.

SEASHORE, CARL E. *Learning and Living in College.* Iowa City, Iowa, University of Iowa, 1927. 124 pp. (University of Iowa Studies, Series on Aims and Progress of Research, Vol. II, No. 1)

This monograph is made up of twelve papers dealing with the "psychology of individual differences applied to the organization and pursuit of higher education: a study based upon experience in the promotion of the gifted student project in the National Research Council." Some of the papers have appeared at other times in bulletins or magazine articles. College administrators and parents of college students should be interested in the material which Dean Seashore presents in his monograph.

GREGORY, W. M. *Visual Aids in the Schools.* Cleveland, The Harter School Supply Company. 31 pp.

This booklet presents in outline form the various visual aids that are available for school use, such as motion pictures, posters, still pictures, charts and diagrams, lantern slides, maps and globes. Very definite and sensible suggestions are given for the choice of apparatus for lantern-slide projection.

***

SPECIAL CLASSES FOR HANDICAPPED CHILDREN

(*Continued from page 251*)

occasions it met with the most cordial reception in the legislative chambers. At the last session it was passed unanimously by the Senate and House committees and also by the Senate. The House calendar committee promised to report it for passage. The reason the bill did not pass had nothing to do with its merits.

The unrest among educators and court and social workers will undoubtedly prevail until the present discrimination against mentally handicapped children, and against some of the most fundamental, basic social interests of the State itself, is removed from the statutes, and a law enacted which is impartial, just, and equitable to all types of less-privileged children. Such a law should provide a reasonable subvention and place the main financial burden on the local communities. This is the way to secure economical and efficient administration of special-class activities.